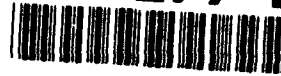


**Naval Research Laboratory**

Washington, DC 20375-5320

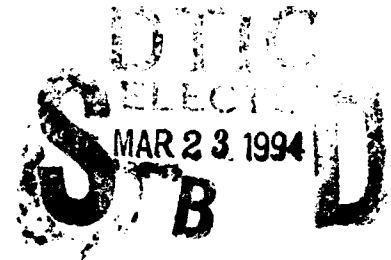
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# **ADP Contract Consolidation... Does It Compute?**



**JOHN L. DOUGLAS**

*Center for Computational Science  
Information Technology Division*

February 15, 1994

**94-09035**



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13. ABSTRACT (Maximum 200 words)  <p>The purpose of this study is to evaluate the NRL ADP Contract Consolidation Program. Participants were asked to respond to a questionnaire concerning their experience and opinions of the NRL-Wide Contracts. Additional information has been drawn from historical data and related literature. The population studied in this research project consisted of Branch Managers and above at the Naval Research Laboratory. These employees are located at the Washington, D.C. location. A survey questionnaire was forwarded to each manager with a goal of obtaining a 100 percent response.</p> <p>The survey findings, along with the literature discussed, support the consolidation program, and relate its timeliness to similar occurrences within industry and government. The section of Relevant Evidence discusses the benefits and savings of consolidating contracts and further consolidating programs and contracts under one program manager.</p>			
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## EXECUTIVE SUMMARY

**Purpose:** The purpose of this study is to evaluate the NRL ADP Contract Consolidation Program. The evaluation will determine if the program has met its tasked objectives.

**Methods:** Participants were asked to respond to a questionnaire concerning their experience and opinions of the NRL-Wide Contracts. Additional information has been drawn from historical data and related literature. The population studied in this research project consisted of Branch Managers and above at the Naval Research Laboratory. These employees are located at the Washington, D.C. location. A survey questionnaire was forwarded to each manager with a goal of obtaining a 100 percent response.

**Results:** The research hypothesis (H1) is supported with the acceptance of the research questions. NRL researchers view the program as successful, convenient, provides cost savings, it was a correct decision, it is meeting their needs, and the program should be expanded and consolidated.

The survey findings, along with the literature discussed, support the consolidation program and relate its timeliness to similar occurrences within industry and government. The section on Relevant Evidence discusses the benefits and savings of consolidating contracts and further consolidating programs and contracts under one program manager.

In support of these findings, the researcher has broken down one of the NRL Lab-Wide contracts to demonstrate the savings which are possible through consolidation of contracts.

**Conclusions:** The researcher became more aware of how the program is perceived by NRL managers, and where to channel resources, as a result of this study. The contracts which need more publicizing, and possible new contract efforts, were pointed out through the survey.

The main problem which was pointed out by the research was the lack of understanding of the program. Personnel know of the program, and may use portions of the program, but fail to understand all of the contracts within, parts of, the program. This is what requires more publication or investigation.

This study suggested that further research is needed into the distribution of information concerning the program, and the differences in requirements between personnel who directly use the contracts and those who indirectly use them.

## 1. INTRODUCTION

Contract priority is established by circulating the list of efforts to all ADP users on the laboratory. Input is received from this list as to priority, usefulness, and additional efforts that should be considered. Once an effort is analyzed for cost effectiveness and need on a laboratory wide basis it is assigned to a business specialist. Laboratory personnel (researchers) volunteer their assistance in writing specifications and evaluating proposals. Thus allowing the contracts to truly reflect the laboratories needs.

The task of providing Laboratory-Wide ADP Contracts is meshed with the input from the laboratory, section personnel, ADP Approval, Contracting, and Legal to provide output in the form of resources for the laboratory to use. In addition to the formal lines of communication, section personnel must establish informal lines to aid in the development of specifications and contract monitoring.

The timeliness and thoroughness of the contract award dictate to a great extent the usage of the contract. The contractor performs in conjunction with the Statement of Work.

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The thoroughness of this document has direct impact upon the contractor's performance. These processes tie the tasks, the individual, and the formal and informal organization into a tightly meshed process.

#### Current Status

The laboratory does not have to use the Lab-Wide contracts that are developed. Because of this, each contract must stand on its own when evaluated by the laboratory. They must provide savings, convenience, and better service to the users. Lab-Wide Contracts personnel work together on new contracts and supporting those already in place. There are presently fourteen contracts awarded or underway. Documentation is provided in Appendix A.

The awarded contracts are presently receiving heavy usage by the NRL community. This has led to the hypothesis that the ADP Program is meeting its objectives of convenience and cost savings.

## 2. PURPOSE

The purpose of this study is to evaluate the NRL ADP Contract Consolidation Program. The evaluation will determine if the program has met its tasked objectives.

#### Conceptual and Operational Definitions of Variables

Success. This is conceptually defined as meeting the tasks assigned to the program. It is operationally defined as a program which is used by, and meets the needs of, NRL researchers.

Convenience. This is conceptually defined as providing contracts for the researchers to utilize. It is operationally

defined as the usefulness and ease of use attained by the program.

Cost Savings. This is conceptually defined as the cost to provide one contract versus multiple contracts. It is operationally defined as the savings in time and money to the individual researchers.

#### Specification of Roles of Variables

Success is a study variable which will yield an ordinal scale. Each contract will be evaluated on a scale from strongly agree to strongly disagree (1-5).

Convenience is a study variable which will yield an ordinal scale. It will be evaluated on a scale from strongly agree to strongly disagree (1-5).

Cost Savings is a study variable which will yield an ordinal scale. It will be evaluated on a scale from strongly agree to strongly disagree (1-5), and by historical data.

#### Research Hypothesis

The success of the NRL Program for the Consolidation of ADP Contracts is due to providing NRL convenience and cost savings, in the procurement of ADP resources.

#### Research Questions

Questions have arisen concerning the research, while formulating the hypothesis. These questions will be answered by the study through use of a questionnaire and historical cost data, and be used to support the hypothesis. The questions are as follows:

1. Do NRL researchers view the Lab-Wide ADP Program as successful?
2. Do NRL researchers view the Lab-Wide ADP Program as convenient?
3. Do NRL researchers, and historical data, support cost savings for the Lab-Wide ADP Program?
4. Was NRL Management's decision correct in establishing the program?
5. Is the Lab-Wide ADP Program meeting the needs of the NRL community?
6. Should the program be expanded?
7. Should all Lab-Wide Contracts be consolidated in one function?

### Research Objectives

The results of this study will be used to evaluate the following:

1. If the Lab-Wide ADP Program is meeting NRL's needs.
2. Provide input to decisions concerning the program.

### 3. RELEVANT EVIDENCE

#### Background Conditions

This is a historical study. The events have already taken place, and are ongoing. Information will be drawn from related articles in support of the research topic, and its significance. The selected references support consolidation, downsizing, and/or cost savings for computer related services.

Consolidation and downsizing are used synonymously within the Department of Defense, and are meant to be referred to synonymously within the literature and research findings.



## Research Findings

Downsizing is discussed in an industry wide view by Weber (Electronics, 1992). Weber states that a part of the downsizing effort is due to the recession, but that something deeper underlies the downsizing: "a sense that the industry must reshape itself in a permanent contraction in light of the ever more competitive global environment" (p. 30). He believes the industry must reduce waste, unnecessary overlap, and contract out those items which can be easily contracted out. The key will be to boost productivity with less resources, thus cutting costs.

In "Downsizing: Bane or Boon?" the term downsizing is related specifically to computer departments and computers (Byte, 1991). The term "Rightsizing" is also introduced. Ryan (Byte, 1991) refers to rightsizing as a more acceptable term than downsizing. He believes that migrating from mainframe computers to other platforms has many benefits. Among these benefits are: equipment cost savings, software cost savings, reduced staff, division of labor, and reduced maintenance costs.

The necessity to downsize, or consolidate, in the Department of Defense (DOD) is brought out in two articles by Bond (Aviation Week & Space Technology, 1991) and Fulghum (Aviation Week & Space Technology, 1992). Bond discusses the Military's use of Total Quality Management (TQM) as a proponent of increased efficiency, consolidation, and cost reduction. Bond cites a program underway in the Air Force which places specific programs, or contracts, under a single manager. The manager is responsible for acquisition and support. This single point of contact results in increased efficiency and cost reduction. In an article strictly discussing Defense cuts, Fulghum talks about General Colin L. Powell's plan for cutting \$100 billion dollars from the Defense budget over the next five years. This will be accomplished by consolidation of roles and missions. Once acquisition is gutted,

further defense cuts will concentrate on personnel, operations, and maintenance.

In an effort to save on computer maintenance, Muller (Corporate Controller, pp. 16-19) discusses the need for well written centralized computer maintenance contracts. Aside from the cost savings, Muller believes that the centralized contract assures the rights of both parties, states maintainability, and allows management to effectively track problems and control costs. Ferris (Computerworld, p. 90) also discusses developing maintenance contracts to cover all of a companies needs. Once again, accountability is a benefit, as well as cost and time savings.

Third-party maintenance (TPM) providers are presented as an alternative to writing multiple contracts by Hayden (Computing Canada, p. 36). A TPM vendor supports a multiplicity of computer products, and offers "umbrella coverage" for the total range of a company's computer products. Hayden believes that a TPM vendor can save "money, time, and anxiety".

McWilliams (Business Week, 1990) and Elliot (Journal of Information Systems Management, 1988) take a different approach. They believe that maintenance is becoming a less lucrative business, and the companies that provide computer maintenance are now providing other services. A single contract can be established which addresses maintenance of computer hardware, software, services, and consulting. This allows for even greater cost and time savings than the individual contracts would provide.

"Navigating the Federal Bureaucracy Labyrinth" is a profile of Marcelline Smith of NASA Ames, by Stephen Jones (Computerworld, pp.145,153). Jones explains Ms Smith's background and the types of services that her group provides for

NASA Ames. Ms Smith provides contracts/vehicles to acquire computer maintenance, services, software, and equipment. Victor Peterson, Acting Deputy Director at Ames, considers the service that Ms Smith provides to save time and money, and be an invaluable asset to NASA Ames.

In an article titled "How to Keep Computers Humming and Save Millions", M.J. Richter discusses the success that the Illinois state government had in consolidating maintenance contracts. The state consolidated more than 60 different vendors, and contracts, throughout 50 agencies into one large contract. The complexity of the administration and invoicing for the different contracts was greatly reduced, which resulted in tremendous savings in administrative overhead and cost. The first year resulted in a savings of \$1.2 million, with a savings to date of about \$12 million.

#### Unpublished Information

The researcher has broken down one of the NRL Lab-Wide contracts to demonstrate the savings which are possible through consolidation of contracts. The DEC/VAX Hardware Maintenance Contract has been projected for administrative as well as actual hardware maintenance savings. The actual second year costs are presented along with the projected non-contract second year costs. The resulting savings are increasing from the previous years savings of \$ 402,110 because of the systems which are being added to the contract. The cost of non-contract maintenance would be \$ 1,769,714 versus a second year Lab-Wide cost of \$ 528,096, resulting in a savings to NRL of \$ 1,241,618 (another \$100,000 has been saved through DEC renegotiating other NRL contracts). The Lab-Wide contract saved \$ 402,110 (over non-contract pricing) in the first contract year; resulting in a projected saving to NRL, for the first two contract years, of \$ 1,643,728.

The DEC/VAX statistics are presented as follows:

NON-CONTRACT COST

SYSTEM COST	\$ 1,666,563	
ADMINISTRATIVE COST	<u>103,151</u>	
NON-CONTRACT COST		\$ 1,769,714

CONTRACT COST

SYSTEM COST	\$ 499,969	
ADMINISTRATIVE COST	<u>28,127</u>	
SECOND YEAR CONTRACT COST		\$ <u>528,096</u>

SECOND YEAR PROJECTED SAVINGS		\$ 1,241,618
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Unresolved Issues

The literature review has supported the idea that the consolidation of ADP contracts will save time, money, and provide convenience. The survey instrument, which will be circulated in conjunction with this research, will determine if the NRL Lab-Wide ADP Contract Consolidation Program is achieving these goals.

Divisions/Branches with their own contracts may not wish to relinquish this control. This would bias their responses, and possible influence on the responses of others. It would also be a reason to respond, where a satisfied user would not feel compelled to respond.

#### 4. METHODS

##### Design

Participants were asked to respond to a questionnaire

concerning their experience and opinions of the NRL-Wide Contracts. Additional information has been drawn from historical data. The focus of this study is to evaluate the NRL ADP Program, and determine if it is meeting its tasked objectives of convenience and cost savings.

## Subjects

The population studied in this research project consisted of Branch Managers and above at the Naval Research Laboratory. These employees are located at the Washington, D.C. location. A total of 50 employees represents the population of branches and activities which had input to the study. A survey questionnaire was forwarded to each manager with a goal of obtaining a 100 percent response.

Forty-Six of the 50 Managers returned completed questionnaires, with four returning messages or commented questionnaires. These four managers worked in areas which had indirect involvement with the program, or had no involvement with ADP. Therefore, they believed their responses would not be valid and should be excluded from the survey. The researcher agreed, and reduced the size of the survey to 46. For the purposes of this study, the total population was 46 managers resulting in a 100 percent response.

## Instrumentation

A two-page 25-question survey questionnaire was used to solicit each manager's opinions of the Lab-Wide ADP Program. The survey was sent with a cover letter which stated the purpose of the researcher's study and the importance of each manager's response. An electronic copy of the survey was forwarded by electronic mail, via the NRL network, to each manager. The confidentiality of the respondents was promised to be maintained.

No attempt was made to determine the identity of the respondents.

## Procedure

An electronic copy of the cover letter (Appendix B), and a survey questionnaire (Appendix C) were forwarded by electronic mail, via the NRL network, to each manager. A two week response time was requested. The responses were actually required in one months time. The two weeks were specified knowing that the time frame would stretch into 3-4 weeks. The added weeks were anticipated due to travel, workload, and the necessary input the managers would require from employees. All of the survey questionnaires were returned by the end of the third week.

The managers could respond either by electronic mail or printing a hard copy, of the questionnaire, and returning it via NRL internal mail. The confidentiality of the respondents was maintained by allowing them the opportunity to edit personal information from the questionnaire by returning a hard copy, and by editing the personal information from each electronic response when it was received.

The survey questionnaire, titled "NRL ADP Contract Consolidation Questionnaire", contained 25 questions. Four of the questions were only for the information of the researcher, for use in the operation of the Lab-Wide Program, and will not be used in the analysis of data. None of the questions dealt with demographic information.

## 5. RESULTS

### Data Analysis

The data collected in this survey was analyzed by finding the mean (average) of the total response for each survey

question. The "NRL ADP Consolidation Questionnaire - Analysis" (Appendix E) breaks down the responses to the survey questions into directly uses the contract and indirectly uses the contract, all who did not specify were grouped with directly uses. The distinction was not used in the analysis of the survey questions, for this research. The data is based on a total population, thus enabling all data to be evaluated, versus sampling.

### Research Questions

The research questions were answered by the study through the use of a questionnaire and historical cost data. The research questions and the questions from the questionnaire which address them are presented in the data and frequency matrices, with the exception of questions 20, 21, 22, and 24. These questions were only for the information of the researcher, and are as follows:

20. The Program should be better publicized.

21. The NRL personnel who handle the contracts are conscientious.

22. The NRL personnel who handle the contracts are competent.

24. The contract demonstrations are informative.

Research Question 1. Do NRL researchers view the Lab-Wide ADP Program as successful?

This is addressed by questionnaire questions 1, 2, and 19. They are as follows:

1. The Lab-Wide Program is understood.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	9	9
2	23	46
3	4	12
4	8	32
5	<u>2</u>	<u>10</u>
	46	109 = 2.3

The mean (average) score for question 1 is 2.3. This results in a response of "Agree", the question is supported, the program is understood.

2. The Program is useful.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	23	23
2	19	38
3	2	6
4	1	4
5	<u>1</u>	<u>5</u>
	46	76 = 1.6

The mean (average) score for question 2 is 1.6. This results in a response of "Agree", the question is supported, the program is useful.

19. The Program is widely known.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	3	3
2	14	28
3	13	39
4	11	44
5	<u>5</u>	<u>25</u>
	46	139 = 3.0

The mean (average) score for question 19 is 3.0. This results in a response of "No Opinion", the program may or may not be widely known. This is tempered by the spread of responses, even with the program not known as well as possible, the program is useful.

The following matrix presents the responses to the questions by frequency of answers. Each value has the total number of responses displayed underneath.

		<u>Value</u>				
		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
		1	2	3	4	5
		-----	-----	-----	-----	-----
<u>Responses</u>	Q 1	9	23	4	8	2
	Q 2	23	19	2	1	1
	Q19	3	14	13	11	5

Accepting questions 1, 2, and 19 support research question 1. The program is viewed as successful.



Research Question 2. Do NRL researchers view the Lab-Wide ADP Program as convenient?

This is addressed by questionnaire questions 3 and 10. They are as follows:

3. The Program is convenient.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	22	22
2	19	38
3	2	6
4	2	8
5	<u>1</u>	<u>5</u>
	46	79 = 1.7

The mean (average) score for question 3 is 1.7. This results in a response of "Agree", the question is supported, the program is convenient.

10. Time savings are realized through the Program.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	24	24
2	13	26
3	6	18
4	2	8
5	<u>1</u>	<u>5</u>
	46	81 = 1.7

The mean (average) score for question 10 is 1.7. This results in a response of "Agree", the question is supported, time savings are realized.

The following matrix presents the responses to the questions by frequency of answers. Each value has the total number of responses displayed underneath.

		<u>Value</u>				
		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
		1	2	3	4	5
		-----	-----	-----	-----	-----
Q 3		22	19	2	2	1
Responses Q10		24	13	6	2	1

Accepting questions 3 and 10 support research question 2. The program is viewed as convenient.

Research Question 3. Do NRL researchers, and historical data, support cost savings for the Lab-Wide ADP Program?

This is addressed by questionnaire question 4 and historical data. The question is as follows:

4. Cost savings are realized through the Program.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	13	13
2	15	30
3	13	39
4	3	12
5	2	10
	46	104 = 2.2

The mean (average) score for question 4 is 2.2. This results in a response of "Agree", the question is supported, cost savings are realized through the program.

The following matrix presents the responses to the question by frequency of answers. Each value has the total number of responses displayed underneath.

	<u>Value</u>				
	Strongly Agree	No Agree	Opinion	Disagree	Strongly Disagree
	1	2	3	4	5
	-----	-----	-----	-----	-----
<u>Responses Q4</u>	13	15	13	3	2

Accepting question 4 along with the historical data from APPENDIX H supports research question 3. The program supports cost savings.

Research Question 4. Was NRL Management's decision correct in establishing the program?

This is addressed by questionnaire questions 3, 4, 6, and 25. They are as follows:

3. The Program is convenient.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	22	22
2	19	38
3	2	6
4	2	8
5	1	5
	46	79 = 1.7

The mean (average) score for question 3 is 1.7. This results in

a response of "Agree", the question is supported, the program is convenient.

4. Cost savings are realized through the Program.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	13	13
2	15	30
3	13	39
4	3	12
5	<u>2</u>	<u>10</u>
	46	104 = 2.2

The mean (average) score for question 4 is 2.2. This results in a response of "Agree", the question is supported, cost savings are realized through the program.

6. NRL mgmts' idea of one phone call for services is working.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	13	13
2	19	38
3	9	27
4	0	0
5	<u>5</u>	<u>25</u>
	46	103 = 2.2

The mean (average) score for question 6 is 2.2. This results in a response of "Agree", the question is supported, NRL mgmts' idea is working.

25. The Lab-Wide Program is a benefit to NRL.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	23	23
2	18	36
3	4	12
4	0	0
5	<u>1</u>	<u>5</u>
	46	76 = 1.6

The mean (average) score for question 25 is 1.6. This results in a response of "Agree", the question is supported, the program is a benefit to NRL.

The following matrix presents the responses to the questions by frequency of answers. Each value has the total number of responses displayed underneath.

		Value				
		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
		1	2	3	4	5
		-----	-----	-----	-----	-----
<u>Responses</u>	Q 3	22	19	2	2	1
	Q 4	13	15	13	3	2
	Q 6	13	19	9	0	5
	Q25	23	18	4	0	1

Accepting questions 3, 4, 6, and 25 support research question 4. Management's decision is viewed as correct.

Research Question 5. Is the Lab-Wide ADP Program meeting the needs of the NRL community?

This is addressed by questionnaire questions 8, 11-16, and 23. They are as follows:

8. Complaints are resolved to the customers' satisfaction.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	7	7
2	19	38
3	15	45
4	3	12
5	<u>2</u>	<u>10</u>
	46	112 = 2.4

The mean (average) score for question 8 is 2.4. This results in a response of "Agree", the question is supported, complaints are resolved to the customers' satisfaction.

11. The hardware maintenance contracts work well.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	16	16
2	23	46
3	4	12
4	1	4
5	<u>2</u>	<u>10</u>
	46	88 = 1.9

The mean (average) score for question 11 is 1.9. This results in a response of "Agree", the question is supported, the hardware maintenance contracts work well.

12. The software maintenance contracts work well.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	3	3
2	6	12
3	33	99
4	1	4
5	<u>3</u>	<u>15</u>
	46	133 = 2.8

The mean (average) score for question 12 is 2.8. This results in a response of "No Opinion", the program may or may not be widely known. This is tempered by the spread of responses.

13. The ADP services contracts work well.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	3	3
2	7	14
3	35	105
4	0	0
5	<u>1</u>	<u>5</u>
	46	127 = 2.7

The mean (average) score for question 13 is 2.7. This results in a response of "No Opinion", the program may or may not be widely known. This is tempered by the spread of responses.

14. The software acquisition contracts work well.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	1	1
2	4	8
3	38	114
4	2	8
5	<u>1</u>	<u>5</u>
	46	136 = 2.9

The mean (average) score for question 14 is 2.6. This results in a response of "No Opinion", the program may or may not be widely known. This is tempered by the spread of responses.

15. The hardware acquisition contracts work well.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	5	5
2	9	18
3	29	87
4	2	8
5	<u>1</u>	<u>5</u>
	46	123 = 2.6

The mean (average) score for question 15 is 2.6. This results in a response of "No Opinion", the program may or may not be widely known. This is tempered by the spread of responses.

16. The Navy-Wide contracts the Program utilizes are useful.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	2	2
2	11	22
3	31	93
4	0	0
5	<u>2</u>	<u>10</u>
	46	127 = 2.7

The mean (average) score for question 16 is 2.7. This results in a response of "No Opinion", the program may or may not be widely known. This is tempered by the spread of responses.

23. The Program is flexible enough to meet your needs.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	6	6
2	15	30
3	19	57
4	4	16
5	<u>2</u>	<u>10</u>
	46	119 = 2.5

The mean (average) score for question 23 is 2.5. This results in a response of "Agree", the question is supported, the program is flexible enough.

The following matrix presents the responses to the questions by frequency of answers. Each value has the total number of responses displayed underneath.

		<u>Value</u>				
		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
		1	2	3	4	5
		-----	-----	-----	-----	-----
<u>Responses</u>	Q 8	7	19	15	3	2
	Q11	16	23	4	1	2
	Q12	3	6	33	1	3
	Q13	3	7	35	0	1
	Q14	1	4	38	2	1
	Q15	5	9	29	2	1
	Q16	2	11	31	0	2
	Q23	6	15	19	4	2

Accepting questions 8, 11-16, and 23 support research question 5. The program is viewed as meeting the needs of the

NRL community.

Research Question 6. Should the program be expanded?

This is addressed by questionnaire questions 5, 9, 17, and

18. They are as follows:

5. More contracts are needed.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	9	9
2	16	32
3	18	54
4	2	8
5	<u>1</u>	<u>5</u>
	46	108 = 2.3

The mean (average) score for question 5 is 2.3. This results in a response of "Agree", the question is supported, more contracts are needed.

9. The Program doesn't yet meet all of the ADP needs.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	4	4
2	17	34
3	20	60
4	3	12
5	<u>2</u>	<u>10</u>
	46	120 = 2.6

The mean (average) score for question 9 is 2.6. This results in a response of "No Opinion", the program may or may not be widely known. This is tempered by the spread of responses.

17. The Program should include related office equipment.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	12	12
2	16	32
3	14	42
4	3	12
5	<u>2</u>	<u>10</u>
	46	108 = 2.3

The mean (average) score for question 17 is 2.3. This results in a response of "Agree", the question is supported, there is a need to include related office equipment.

18. There is a need for a Lab-Wide Contract for the maintenance of FAX equipment.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	15	15
2	19	38
3	10	30
4	1	4
5	<u>1</u>	<u>5</u>
	46	92 = 2.0

The mean (average) score for question 18 is 2.0. This results in a response of "Agree", the question is supported, there is a need for a contract for the maintenance of FAX equipment.

The following matrix presents the responses to the questions by frequency of answers. Each value has the total number of responses displayed underneath.

		<u>Value</u>				
		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
		1	2	3	4	5
		-----	-----	-----	-----	-----
<u>Responses</u>	Q 5	9	16	18	2	1
	Q 9	4	17	20	3	2
	Q17	12	16	14	3	2
	Q18	15	19	10	1	1

Accepting questions 5, 9, 17, and 18 support research question 6. The program should be expanded.

Research Question 7. Should all Lab-Wide Contracts be consolidated in one function?

This is addressed by questionnaire questions 6 and 7. They are as follows:

6. NRL mgmts' idea of one phone call for services is working.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	13	13
2	19	38
3	9	27
4	0	0
5	<u>5</u>	<u>25</u>
	46	103 = 2.2

The mean (average) score for question 6 is 2.2. This results in a response of "Agree", the question is supported, NRL mgmts' idea is working.



7. All Lab-Wide Contracts should be a one call service.

<u>Value (x)</u>	<u>Frequency (f)</u>	<u>(f)(x)</u>
1	17	17
2	16	32
3	12	36
4	0	0
5	<u>1</u>	<u>5</u>
	46	90 = 1.9

The mean (average) score for question 7 is 1.9. This results in a response of "Agree", the question is supported, all Lab-Wide Contracts should be a one call service.

The following matrix presents the responses to the questions by frequency of answers. Each value has the total number of responses displayed underneath.

		<u>Value</u>				
		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
		1	2	3	4	5
		-----	-----	-----	-----	-----
Q 6		13	19	9	0	5
<u>Responses</u> Q 7		17	16	12	0	1

Accepting questions 6 and 7 support research question 7. All Lab-Wide Contracts should be consolidated in one function.

## 6. INTERPRETATIONS

### Discussion of Findings

The research questions were formulated to support the research hypothesis (H1), by accepting the questions from the survey. The acceptance of the survey questions is based on the average answer from the respondents. If the average answer supports the survey questions, then the survey questions support the research questions. The research hypothesis (H1) is supported with the acceptance of the research questions. NRL researchers view the program as successful, convenient, provides cost savings, it was a correct decision, it is meeting their needs, and the program should be expanded and consolidated.

The survey findings, along with the literature discussed, support the consolidation program and relates its timeliness to similar occurrences within industry and the government. The literature review discusses the benefits and savings of consolidating contracts and further consolidating programs and contracts under one program manager. This is what was accomplished at NRL, with equal success.

In support of these findings, the researcher has broken down one of the NRL Lab-Wide contracts to demonstrate the savings which are possible through consolidation of contracts. The DEC/VAX Hardware Maintenance Contract has been projected for administrative as well as actual hardware maintenance savings. The actual second year costs are presented along with the projected non-contract second year costs. The resulting savings are increasing from the previous years savings of \$ 402,110 because of the systems which are being added to the contract. The cost of non-contract maintenance would be \$ 1,769,714 versus a second year Lab-Wide cost of \$ 528,096, resulting in a savings to NRL of \$ 1,241,618 (another \$100,000 has been saved through DEC renegotiating other NRL contracts). The Lab-Wide contract saved \$ 402,110 (over non-contract pricing) in the first contract year; resulting in a projected saving to NRL, for the first two contract years, of \$ 1,643,728. This historical data further supports the research hypothesis.

The null hypothesis (H0) would have been that there is no correlation between convenience, cost savings, and the success of the program. This was clearly rejected; thereby accepting the research hypothesis (H1) that "The success of the NRL Program for the Consolidation of ADP Contracts is due to meeting NRL's needs of convenience and cost savings".

## Accomplishment of Purpose

The purpose of this research project was to determine if the NRL program for the consolidation of ADP Contracts is meeting NRL's needs of convenience and cost savings. The determination was made that the program is meeting these needs.

The researcher became more aware of how the program is perceived by NRL managers, and where to channel resources, as a result of this study. The contracts which need more publicizing, and possible new contract efforts, were pointed out through the survey.

## 7. RECOMMENDATIONS

### Dealing with the Problem

The main problem which was pointed out by the research was the lack of understanding of the program. Personnel know of the program, and may use portions of the program, but fail to understand all of the contracts within, parts of, the program. This is what requires more publication or investigation.

### Further Research

This study suggested that further research is needed into the distribution of information concerning the program, and the differences in requirements between personnel who directly use the contracts and those who indirectly use them. Information concerning the program is distributed by various types of media including electronic mail, so it is obviously being received, however, the type of information may need to be altered or enhanced. The survey was responded to as either directly using the contracts, indirectly using the contracts, or no stipulation. These differences may need to be researched to determine if there

are any differences in needs/requirements between the groups. The "NRL ADP Consolidation Questionnaire - Analysis" (Appendix E) breaks down the responses to the survey questions into directly uses the contract and indirectly uses the contract, all who did not specify were grouped with directly uses. The distinction was not used in the analysis of the survey questions, for this research, however, it provides a basis for projected research.

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**APPENDIX A**  
**List of NRL ADP Lab-Wide Contracts**  
**NRL LAB-WIDE ADP CONSOLIDATION EFFORTS**

<b>5822 EFFORTS</b>	<b>STATUS</b>	<b>CONTRACT MONITOR</b>
1. DEC/VAX Hardware Maintenance	Awarded - 11/30/90	Pat Kramer
2. PC/Mac H/W Maint. (per call)	Awarded - 03/22/91	Pat Martin
3. Sun Workstation Maint.	Awarded - 05/03/91	Jean Jones
4. MacTCP Site License	Awarded - 05/17/91	Beverly Bryant
5. DEC/VAX Software Maint.	Awarded - 06/25/91	Jean Jones
6. DEC, Systems & S/W Analyst	Awarded - 07/11/91	Pat Martin
7. TCP-IP Site License (VAX)	Awarded - 09/30/91	Jean Jones
8. Generic Printer & Terminal, Tektronix H/W Maint.	Awarded - 01/09/92	Pat Kramer
9. Desktop Workstation Acq.	Est. Award Date - Aug 92	Beverly Bryant
10. Silicon Graphics Maint.	Est. Award Date - Sept 92	Beverly Bryant
11. Database Acq/Maint.	Est. Award Date - Dec 92	Pat Kramer
12. IBM RISC and Gen Wrk Maint.	Est. Award Date - Dec 92	Pat Martin
13. Business Utilities Acq/Maint.	SOW in process	Jean Jones
14. Scientific Utilities Acq/Maint.	SOW in process	Beverly Bryant

**APPENDIX B**  
**Cover Letter for Questionnaire**

**DATE:** January 15, 1993

**REPLY TO**  
**ATTN OF:** Code 5822

**SUBJECT:** Survey for Lab-Wide Contracts

**TO:** Dist ab

1. I am conducting a survey concerning the NRL Lab-Wide ADP Consolidation Program. The purpose of the survey is to determine if the program is meeting the needs of NRL through cost benefits and usefulness.

2. The results of the survey will be used for planning purposes and will be compiled and presented to upper management.

3. Enclosed is a questionnaire designed to complete the survey. Please complete one questionnaire for each Branch/Activity. Your opinion would be greatly appreciated. Simply signify the best response for each question by replacing the number with an "X", in the appropriate column, and E-mailing; or circling the response, and mailing, for hard copy. Please include any explanations/comments in the "Comments" section. There is no need to sign the questionnaire, and all responses will be handled confidentially.

4. Please return the questionnaires by COB on February 1, 1993. Your cooperation will contribute significantly, and is greatly appreciated.

Thanks for the continued support.

John Douglas  
Code 5822

# APPENDIX C NRL ADP Contract Consolidation Questionnaire

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
1. The Lab-Wide Program is understood.	1	2	3	4	5
2. The Program is useful.	1	2	3	4	5
3. The Program is convenient.	1	2	3	4	5
4. Cost savings are realized through the Program.	1	2	3	4	5
5. More contracts are needed.	1	2	3	4	5
6. NRL mgmts' idea of one phone call for services is working.	1	2	3	4	5
7. All Lab-Wide Contracts should be a one call service.	1	2	3	4	5
8. Complaints are resolved to the customers' satisfaction.	1	2	3	4	5
9. The Program doesn't yet meet all of the ADP needs.	1	2	3	4	5
10. Time savings are realized through the Program.	1	2	3	4	5
11. The hardware maintenance contracts work well.	1	2	3	4	5
12. The software maintenance contracts work well.	1	2	3	4	5
13. The ADP services contracts work well.	1	2	3	4	5
14. The software acquisition contracts work well.	1	2	3	4	5
15. The hardware acquisition contracts work well.	1	2	3	4	5
16. The Navy-Wide contracts the Program utilizes are useful.	1	2	3	4	5
17. The Program should include related office equipment.	1	2	3	4	5
18. There is a need for a Lab-Wide Contract for the maintenance of FAX equipment.	1	2	3	4	5
19. The Program is widely known.	1	2	3	4	5
20. The Program should be better publicized.	1	2	3	4	5
21. The NRL personnel who handle the contracts are conscientious.	1	2	3	4	5
22. The NRL personnel who handle the contracts are competent.	1	2	3	4	5
23. The Program is flexible	1	2	3	4	5



enough to meet your needs.

24. The contract demonstrations  
are informative.

1

2

3

4

5

25. The Lab-Wide Program is a  
benefit to NRI.

1

2

3

4

5

COMMENTS:

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## APPENDIX D

### EXAMPLE: DEC/VAX Hardware Maintenance Contract Savings

The DEC/VAX Hardware Maintenance Contract has been projected for administrative as well as actual hardware maintenance savings. The actual second year costs are presented along with the projected non-contract second year costs. The resulting savings are increasing from the previous years savings of \$ 402,110 because of the systems which are being added to the contract.

The cost of non-contract maintenance would be \$ 1,769,714 versus a second year Lab-Wide cost of \$ 528,096, resulting in a savings to NRL of \$ 1,241,618 (another \$100,000 has been saved through DEC renegotiating other NRL contracts). The Lab-Wide contract saved \$ 402,110 (over non-contract pricing) in the first contract year; resulting in a projected saving to NRL, for the first two contract years, of \$ 1,643,728.

The DEC/VAX statistics are presented as follows:

#### NON-CONTRACT COST

SYSTEM COST	\$ 1,666,563
ADMINISTRATIVE COST	<u>103,151</u>
NON-CONTRACT COST	\$ 1,769,714

#### CONTRACT COST

SYSTEM COST	\$ 499,969
ADMINISTRATIVE COST	<u>28,127</u>
SECOND YEAR CONTRACT COST	\$ <u>528,096</u>
SECOND YEAR PROJECTED SAVINGS	\$ 1,241,618

Projected prices based on the following:

NON-CONTRACT PROJECTIONS	SECOND YEAR PROJECTIONS
125 Systems (GSA price)	125 Systems (First Year price)
135 Per-Calls (GSA price)	135 Per-Calls (First Year price)
23 COTR/Monitors (5%)	1 COTR's
1 Contract Specialist (50%)	1 Contract Monitor (50%)
	1 Contract Specialist (10%)

# APPENDIX E NRL ADP Consolidation Questionnaire - Analysis

	Response - Direct use contacts						Response - Indirect use contacts							
	Strongly Agree (1)	Agree (2)	No Opinion (3)	Disagree (4)	Strongly Disagree (5)	Average	Strongly Agree (1)	Agree (2)	No Opinion (3)	Disagree (4)	Strongly Disagree (5)	Average	Overall Average Rating	
1 The Lab Wide Program is underway	0	10	2	4	1	2.1	1	4	2	4	1	2.0	2.4 Agree	
2 The Program is useful	20	12	1	1	0	1.6	3	7	1	0	1	2.1	1.7 Strongly Agree	
3 The Program is convenient	10	13	0	2	0	1.6	3	6	2	0	1	2.2	1.7 Strongly Agree	
4 Cost savings are realized through the Program	11	11	0	2	2	2.2	2	4	5	1	0	2.4	2.5 Agree	
5 More contacts are needed	0	12	12	2	0	2.2	1	4	0	0	1	2.7	2.2 Agree	
6 NRL, not a lot of one phone call, for service, make to a one call service	11	13	7	0	2	2.1	2	6	2	0	2	2.5	2.2 Agree	
7 All Lab Wide contacts should be a one call service	13	13	0	0	0	1.0	4	3	4	0	1	2.3	2.0 Agree	
8 Complaints are reduced to the customer's satisfaction	4	10	0	2	1	2.4	3	1	0	1	1	2.7	2.4 Agree	
9 The Program doesn't get most of all the ADP needs	2	14	14	2	1	2.0	2	3	0	0	1	2.0	2.0 No Opinion	
10 Time savings are realized through the Program	20	7	2	2	1	1.6	2	6	4	0	0	2.2	1.8 Strongly Agree	
11 The hardware maintenance contracts work well	14	10	2	1	1	1.6	2	7	2	0	1	2.3	1.6 Agree	
12 The software maintenance contracts work well	3	6	20	1	2	2.0	0	0	11	0	1	3.2	2.0 No Opinion	
13 The ADP service contracts work well	3	0	20	0	0	0.0	0	1	10	0	1	3.1	2.0 No Opinion	
14 The software acquisition contracts work well	1	2	20	2	0	2.0	0	2	0	0	1	3.0	3.0 No Opinion	
15 The hardware acquisition contracts work well	0	0	21	2	0	2.0	0	3	0	0	1	3.0	2.7 No Opinion	
16 The Navy Wide contacts the Program officers are useful	2	0	22	0	1	2.7	0	3	0	0	1	3.0	2.8 No Opinion	
17 The Program should include related office equipment	0	12	10	2	1	2.2	3	4	4	1	1	2.5	2.3 Agree	
18 There is a need for a Lab Wide contract for the maintenance of FAM equipment	12	14	7	1	0	1.6	3	5	3	0	1	2.3	2.0 Agree	
19 The Program is widely known	3	12	0	0	2	2.0	0	2	4	2	2	3.0	3.0 No Opinion	
20 The Program should be better publicized	1	7	0	14	0	3.5	4	3	2	2	1	3.4	3.2 No Opinion	
21 The NRL personnel who handle the contacts are courteous	21	12	1	0	0	1.4	2	6	3	1	1	2.5	1.7 Strongly Agree	
22 The NRL personnel who handle the contacts are competent	20	11	2	1	0	1.6	2	5	3	1	1	2.5	1.6 Strongly Agree	
23 The Program is flexible enough to meet your needs	0	13	12	3	1	2.0	1	2	7	1	1	2.0	2.0 Agree	
24 The contact demonstrations are informative	2	11	21	0	0	2.0	0	4	0	0	0	2.7	2.0 Agree	
25 The Lab Wide Program is a benefit to NRL	10	11	3	0	0	1.6	4	7	1	0	1	2.0	1.7 Strongly Agree	
Direct Average -						2.2	Indirect Average -						2.0	Overall Average - 2.2 Agree